INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US04/12390

Box No. I Basis of the report

1. With regard to the **language**, this report is based on:
   - ☒ the international application in the language in which it was filed.
   - ☐ a translation of the international application into English, which is the language of a translation furnished for the purposes of:
     - ☐ international search (under Rules 12.3 and 23.1(b))
     - ☐ publication of the international application (under Rule 12.4(a))
     - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
   - ☐ the international application as originally filed/furnished
   - ☒ the description:
     pages 1-6 as originally filed/furnished
     pages* NONE received by this Authority on _____
     pages* NONE received by this Authority on _____
   - ☒ the claims:
     pages NONE as originally filed/furnished
     pages* NONE as amended (together with any statement) under Article 19
     pages* 7, 8 and 8/1 received by this Authority on 18 February 2005 (18.02.2005)
     pages* NONE received by this Authority on _____
   - ☒ the drawings:
     pages 1/1 as originally filed/furnished
     pages* NONE received by this Authority on _____
     pages* NONE received by this Authority on _____
   - ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages _____
   - ☐ the claims, Nos. _____
   - ☐ the drawings, sheets/figs _____
   - ☐ the sequence listing (*specify*): _____
   - ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages _____
   - ☐ the claims, Nos. _____
   - ☐ the drawings, sheets/figs _____
   - ☐ the sequence listing (*specify*): _____
   - ☐ any table(s) related to the sequence listing (*specify*): _____

* *If item 4 applies, some or all of those sheets may be marked "superseded."*

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 1-20	YES
	Claims NONE	NO
Inventive Step (IS)	Claims 1-20	YES
	Claims NONE	NO
Industrial Applicability (IA)	Claims 1-20	YES
	Claims NONE	NO

2. Citations and Explanations (Rule 70.7)

Claims 1-20 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a method and apparatus for distributing solids to a tube comprising a center member with a plurality of dampers axially spaced and extending radially from the center member toward an inside diameter of the tube on substantially only one 180 degrees radius of the center member, as claimed.

Claims 1-20 meet the criteria set out in PCT Article 33(4), and thus meet industrial applicability because the subject matter claimed can be made or used in industry.

---------- NEW CITATIONS ----------

US 5,247,970 A (RYNTVEIT et al.) 28 September 1993, see entire document.

US 6,467,513 A (YANARU et al.) 22 October 2002, see entire document.

1. An apparatus for distributing solid particles into a tube, comprising:

a center member; and

a plurality of damper members connected to the center member and arranged on the center member to provide substantially circumferential coverage along a longitudinal length of the tube, wherein individual ones of the plurality of damper members are axially spaced from one another along the center member and each one extends in a radial direction away from the center member toward an inside diameter of the tube on substantially only one 180° radius of the center member such that the damper member itself lacks substantial coverage of a cross section of the tube.

2. A method for distributing solid particles into a tube, comprising:

positioning a loading tool in an interior of the tube, the loading tool having a center member and a plurality of damper members connected to the center member and arranged on the center member to provide substantially circumferential coverage along a longitudinal length of the tube, wherein individual ones of the plurality of damper members are axially spaced from one another along the center member and each one extends in a radial direction away from the center member toward an inside diameter of the tube on substantially only one 180° radius of the center member such that the damper member itself lacks substantial coverage of a cross section of the tube;

filling the tube with the solid particles, wherein the solid particles contact the plurality of damper members; and

removing the loading tool from the tube as the solid particles fill the tube.

3. A method for distributing solid particles into a tube, comprising:

positioning a loading tool in an interior of the tube, the loading tool having a center member and a plurality of damper members connected to the center member and arranged on the center member to provide substantially circumferential coverage along a longitudinal length of the tube, wherein individual ones of the plurality of damper members are axially spaced from one another along the center member and each one extends in a radial direction away from the center member toward an inside diameter of the tube on substantially only one 180° radius of the

center member such that the damper member itself lacks substantial coverage of a cross section of the tube;

filling the tube with the solid particles, wherein the solid particles contact the plurality of damper members;

removing the loading tool from the tube as the solid particles fill the tube; and

utilizing a sensor to communicate the position of a second portion of the center member to a first portion of the center member.

4. The method for distributing solid particles into a tube of claim 3, wherein the second portion of the center member is located at a lowest extremity of the center member.

5. The method for distributing solid particles into a tube of claim 3, wherein the first portion of the center member is located at an upper portion of the center member.

6. The method for distributing solid particles into a tube of claim 3, further comprising breaking the center member into sections as the loading tool is removed from the tube.

7. The method for distributing solid particles into a tube of claim 3, further comprising breaking the center member into sections at an eyelet and mating shackle within the center member as the loading tool is removed from the tube.

8. The apparatus of claim 1, wherein the center member comprises a wire.

9. The apparatus of claim 1, wherein the center member comprises a chain.

10. The apparatus of claim 1, wherein the center member comprises a rod.

11. The apparatus of claim 1, wherein the plurality of damper members are made of plastic.

12. The apparatus of claim 1, wherein each of the plurality of damper members includes a locking portion that attaches a longitudinal member around the center member.

13. The apparatus of claim 12, wherein the longitudinal member passes back through a section of the locking portion to form a loop.

14. The method of claim 2, wherein the center member comprises a wire.

15. The method of claim 2, wherein the center member comprises a chain.

16. The method of claim 2, wherein the center member comprises a rod.

17. The method of claim 2, wherein the plurality of damper members are made of plastic

18. The method of claim 2, wherein each of the plurality of damper members includes a locking portion that attaches a longitudinal member around the center member.

19. The method of claim 18, wherein the longitudinal member passes back through a section of the locking portion to form a loop.

20. The method of claim 2, wherein removing the loading tool includes pulling the loading tool upwards between catalyst filing sequences without removing the loading tool during the catalyst filing sequences.